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09/772,231	01/29/2001	Narayanan Ganapathy	MS155741.1	9670

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EXAMINER
HOFFMAN, BRANDON S

ART UNIT	PAPER NUMBER
2136	

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/772,231	GANAPATHY, NARAYANAN
	Examiner	Art Unit	
	Brandon Hoffman	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-35 are pending in this office action.

2.   Applicant's arguments, filed December 15, 2004, have been fully considered but they are not persuasive.

Rejections

3.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

4.   Claims 1-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Bruno et al. (U.S. Patent No. 6,604,123).

Regarding claim 1, Bruno et al. teaches a system to facilitate substantially secure communication of data from a user-level process, comprising:

- At least a first queue associated with the process, such that the process is operative to directly communicate a message relative to the first queue (fig. 3, ref. num 318); and

- A first communication context operative to communicate the message between the first queue and a second communication context (fig. 3, ref. num 506);

- Wherein communication between the first queue and the first communications

  context is controlled based on whether an appropriate association exists between

  the first queue and the first communications context, the association between the

  first queue and the first communications context being provided through a

  privileged operation not adjustable by the **user-level** process (col. 8, lines 3-13).

Regarding <u>claim 2</u>, <u>Bruno et al.</u> teaches wherein the first queue and the first

communication context reside at a first node that is different from that of the second

communication context (fig. 3, ref. num 312 different from 314).

Regarding <u>claim 3</u>, <u>Bruno et al.</u> teaches further comprising an interface at the first

node operative to validate messages communicated from the first queue to the first

communication context (col. 7, lines 23-27).

Regarding <u>claim 4</u>, <u>Bruno et al.</u> teaches wherein the interface is operative to

prevent messages from being communicated from the first queue to the first

communication context if an association mismatch exists between the first queue and

the first communication context (col. 7, lines 23-27).

Regarding <u>claim 5</u>, <u>Bruno et al.</u> teaches wherein the appropriate association

between the first queue and the first communication context requires membership to a

common domain (col. 7, lines 27-54).

Regarding <u>claim 6</u>, <u>Bruno et al.</u> teaches further comprising a second queue

associated with a second process at the first node, such that the second process is

operative to directly communicate a message to the second queue (fig. 1, ref. num 116

and 120, a first and second queue, respectively).

Regarding <u>claim 7</u>, <u>Bruno et al.</u> teaches wherein the second queue is associated

with the common domain through a privileged operation, such that the first and second

queues can share the first communication context to communicate messages through a

channel defined by the first communication context and the second communication

context, each of the first and second queues being operative to communicate messages

with at least one process at a node where the second communication context resides

(fig. 3, ref. num 312 and 314 can both communicate to 318, which is in a privileged

mode).

Regarding <u>claim 8</u>, <u>Bruno et al.</u> teaches wherein the first process further

comprises a process operating in a user mode and the second process comprises a

process operating in a user mode (fig. 3, ref. num 502 and 506, a first and second

process).

Regarding <u>claim 9</u>, <u>Bruno et al.</u> teaches further including a third communication

context associated with the second queue through a privileged operation at the first

node, the third communication context enabling communication between the third

communication context and a fourth communication context that resides a node

different from the first node (fig. 3, ref. num 316 is a privileged operation between 312

and 314, which communicates to 308).

Regarding claim 10, Bruno et al. teaches wherein the common domain is a first

domain, the association between the second queue and the third communication

context corresponding to a second domain that is different from the first domain,

wherein each communication channel established in the second domain is isolated from

each channel established in the first domain (fig. 1, ref. num 116 and 120, each channel

is isolated).

Regarding claim 11, Bruno et al. teaches wherein the first queue and the first

communication context reside at a first node that is different from a second node at

which the second communication context resides, the system further comprising a third

communication context at the first node to enable communication of messages between

the third communication context and a fourth communication context that resides at a

third node that is different from the first node (fig. 3, ref. num 312 communicates with

314 separately than 312 communicates with 308).

Regarding claim 12, Bruno et al. teaches wherein the first queue is associated

with the third communication context through a privileged operation, such that the first

process is operative to communicate the message over a communication channel

established between the third communication context and a fourth communication

context that resides at the third node, which is different from the second node (fig. 3, ref.

num 318 resides in the privileged mode, controlling operations between 312, 314, and

310).

Regarding claim 13, Bruno et al. teaches wherein the first queue and the first

communication context are associated so as to be part of a first domain, the system

further comprising a second queue is associated with a second process, the second

queue being associated with a third communication context so as to be part of second

domain that is isolated relative to the first domain (fig. 3, ref. num 312 and 308).

Regarding claim 14, Bruno et al. teaches a system to facilitate communication of

data, comprising:

- A virtual hardware component at a first node operable to communicate a

  message received directly from an associated process (fig. 3, ref. num 318); and

- A first channel endpoint established at the first node, the first channel endpoint

  being operative to communicate messages to a second channel endpoint

  residing at a second node (fig. 3, ref. num 602);

- Wherein each of the virtual component and the first channel endpoint is

  associated with a respective domain through a privileged operation at the first

  node, communication of messages between the virtual component and the first

  channel endpoint being controlled based on validation of the respective domains

  for the virtual component and the first channel endpoint (col. 8, lines 3-13).

Regarding claim 15, Bruno et al. teaches wherein hardware at the first node is operative to prevent messages from being sent between the virtual component and the first channel endpoint in response to detecting an invalid association between the virtual component and the first channel endpoint (col. 7, lines 23-27).

Regarding claim 16, Bruno et al. teaches wherein the virtual component is a first virtual component, the system further comprising a second virtual hardware component operative to communicate a message directly with an associated process at the first node (col. 7, lines 23-54).

Regarding claim 17, Bruno et al. teaches wherein the second virtual hardware component and the first virtual hardware component are members of a common domain, domain membership being assigned through a privileged operation not adjustable by the first or second process, wherein the first and second virtual components are operative to share the first channel endpoint of the first node, such that each of the first and second processes can communicate messages with at least one process at the second node (fig. 3, ref. num 316).

Regarding claim 18, Bruno et al. teaches further including a third channel endpoint at the first node, the third channel endpoint being operative to communicate messages with a fourth channel endpoint that resides at a node different from the first node (fig. 3, ref. num 504 or 512).

Regarding claim 19, Bruno et al. teaches wherein the virtual component is a first
virtual hardware component, the system further comprising a second virtual hardware
component at the first node that is associated with the third channel endpoint through a
privileged operation at the first node (fig. 1, ref. num 116 and 120 communicates with
the other protected domains).

Regarding claim 20, Bruno et al. teaches wherein each of the first and third
channel endpoints belongs to different domains, such that each communication channel
established between associated channel endpoints in one of the domains is isolated
from each communication channel established between associated channel endpoints
in each other of the domains (fig. 1, ref. num 114 and 118 are different domains).

Regarding claim 21, Bruno et al. teaches wherein each of the first and third
channel endpoints belongs to a common domain, such that each of the first and second
processes at the first node is operative to share first and third channel endpoints to
respectively communicate a message with at least one process at the second and third
nodes based on data in the respective message (fig. 1, ref. num 116 and 120 are same
domains).

Regarding claim 22, Bruno et al. teaches a system to facilitate communication of
data, comprising:

- Storage means for receiving a message provided directly from a user-level
  process (fig. 3, ref. num 318);

- Communication means associated with the storage means for, upon validation of a domain association between the storage means and the communication means, sending the stored request to a corresponding communication means at another node in the system (fig. 3, ref. num 602); and

- Validation means for validating the association between the storage means and the communication means, the storage means and the communication means being associated in a privileged operation not adjustable by user-level processes (col. 8, lines 3-13).

Regarding claim 23, Bruno et al. teaches a system to facilitate communication of data, comprising:

- Virtual storage means at a first node for storing a message for direct communication relative to a user-level process (fig. 3, ref. num 318);

- Endpoint communication means at the first node for means for, upon determining a common domain membership for the storage means and the endpoint communication means, enabling communication between the virtual storage means and the endpoint communication means (fig. 3, ref. num 602); and

- Control means for independently controlling domain membership for each of the virtual storage means and the endpoint communication means (col. 8, lines 3-13).

Regarding claim 24, Bruno et al. teaches wherein the endpoint communication means further includes means for preventing communication of messages between the

virtual storage means and the endpoint communication means in the absence of a
common domain membership among virtual storage means and the endpoint
communication means (col. 7, lines 23-54).

Regarding claim 25, Bruno et al. teaches wherein the endpoint communication
means further includes means for permitting communication of messages between the
virtual storage means and the endpoint communication means when common domain
membership exists among virtual storage means and the endpoint communication
means (col. 7, lines 23-54).

Regarding claim 26, Bruno et al. teaches a computer-readable medium having
computer-executable instructions for:

- In a privileged mode, setting domain membership for a queue of a first node and
  setting domain membership for a communication component of the first node, the
  communication component of the first node being operable to communicate
  messages with a corresponding communication component at a second node,
  the domain membership being inaccessible by user-level processes, the queue
  being mapped into memory of an associated user-level process at the first node,
  such that the user-level process can communicate directly with the queue (col. 8,
  lines 3-13); and
- Controlling communication of message between the queue and the
  communication component based on the domain membership set for each of the
  queue and the communication component (col. 7, line 55 through col. 8, line 2).

Regarding claim 27, Bruno et al. teaches having further computer-executable

instructions for providing an error message to the associated user-level process if the

domain membership between the queue and the communication component is invalid

(col. 7, lines 23-54).

Regarding claim 28, Bruno et al. teaches having further computer-executable

instructions for analyzing the message to identify which of a plurality of communication

contexts is designated and validating domain membership between the queue and the

designated communication context to control communication of the message between

the queue and the designated communication context (col. 7, lines 23-54).

Regarding claim 29, Bruno et al. teaches a method to facilitate communication in

a system architecture in which a process is operative to communicate a message

directly with a storage component coupled to at least one local communications

component in a node for communicating the message for receipt by a second

communications component, the method comprising:

- Associating the storage component with a domain for temporarily storing the

    message (fig. 3, ref. num 318);

- Associating the local communications component with a domain (fig. 3, ref. num

    602); and

- Controlling communication of a message between the storage component and

    the local communications component based on the domain of the storage

component and the domain of the local communications component (col. 8, lines 3-13).

Regarding claim 30, Bruno et al. teaches wherein the domain for the storage component and the domain for the association of the local communications component are implemented independently in privileged operation not adjustable by the user-level process (fig. 3, ref. num 316).

Regarding claim 31, Bruno et al. teaches wherein the controlling further comprises validating the domain of the storage component relative the domain of the local communication component (col. 7, lines 27-47).

Regarding claim 32, Bruno et al. teaches further comprising preventing communication of the message from the storage component to the communication component in the absence of a match between the domain of the storage component and the domain of the communication component (col. 7, lines 23-27).

Regarding claim 33, Bruno et al. teaches further comprising generating an error message in the absence of a match between the domain of the at least part of the storage component and the domain of the communication component (col. 6, lines 15-19).

Regarding <u>claim 34</u>, <u>Bruno et al.</u> teaches further comprising sending the
message from the storage component to the communication component in response to
a valid association existing between the domain of the storage component and the
domain of the communication component (col. 7, lines 27-54).

Regarding <u>claim 35</u>, <u>Bruno et al.</u> teaches further comprising discerning from the
message which of at least one of a plurality of communication components is
designated and validating association between the storage component and each
designated communication component to control communication of the message
between the storage component and each designated communication component (col.
7, lines 23-54).

Response to Arguments

5.   Applicant argues:

        a.   Independent claim 1 does not show an association between a first queue
and a first communication context provided through a privileged operation not
adjustable by a user-level process (page 12, section A).

        b.   Independent claim 14 does not show a virtual component and a first
channel endpoint both established at a first node where each is associated with a
respective domain through a privileged operation, communication of messages
being controlled based on validation of the respective domains (page 12/13,
section B).

c.   Independent claim 22 does not show validating an association between a storage means and a communication means, the storage means and the communication means being associated in a privileged operation not adjustable by user-level processes, and storage means for receiving a message provided directly from a user-level process (page 13, section C).

d.   Independent claim 23 does not show virtual storage means at a first node, and endpoint communication means at the first node and upon determining a common domain membership for the storage means and the endpoint communications means, enabling communication between the virtual storage means and the endpoint communication means (page 13/14, section D).

e.   Independent claim 26 does not show in a privileged mode, setting domain membership for a queue of a first node and setting domain membership for a communication component of the first node, and controlling communication of message between the queue and the communication component based on the domain membership set for each of the queue and the communication component, the domain membership being inaccessible by user-level processes (page 14, section E).

f.   Independent claim 29 does not show controlling communication of a message based on a domain of a storage component and a domain of a local communications component (page 14/15, section F).

g.   The dependent claims are allowable based on their dependency on the independent claims.

Regarding argument (a), examiner disagrees with applicant. Figure 3 and

column 8, lines 3-13, shows a first queue (318) and a first communication context (312)

associated with each other by a system call (602). They are associated with each other

because the server (308) defines a specific portal (318) for the client (312) to use;

therefore the client is associated with a specific server through the use of a specific

portal (see col. 7, lines 23-54 of Bruno et al.). The operation is privileged—not

adjustable by a user-level process—because the queue (318) is in the nucleus, which is

privileged, whereas the communication context (312) is in the user-level, which is not

privileged (see col. 6, lines 40-44 of Bruno et al.).

Regarding argument (b), examiner disagrees with applicant. From the argument

above (letter a), it is shown that the client has a privileged association with the queue

that is non-adjustable by the user-level process. The first node is the client; the second

node is the server. The client can communicate with server, through the use of the

queue, ONLY because the server registered the particular portal code to associate the

client with the server. Based on the association between the client and the queue, in

order to communication with the server, claim 14 remains rejected.

Regarding argument (c), examiner disagrees with applicant. See the response to

arguments (a) and (b), above. The validation means are performed with help by the

name server, who checks access restrictions and if access is approved the server

information is given to the client (see col. 7, lines 23-33). The storage means for

receiving a message provided directly from a user-level process remains on the client or

server. It is well known that clients and server have storage means.

Regarding argument (d), examiner disagrees with applicant. See the response to arguments (a)-(c), above.

Regarding argument (e), examiner disagrees with applicant. Bruno et al. teaches creating the portal code for the client to access the server in privileged mode. The portal manager (314) establishes the portal code locations (316) in the nucleus (or privileged mode). As for controlling communication of messages between the queue and the communication component ... inaccessible by user-level processes, these steps are taught as explained in response to arguments section (a)-(c), above.

Regarding argument (f), examiner disagrees with applicant. See the response to arguments (a)-(c), above.

Regarding argument (g), examiner disagrees with applicant. Based on the arguments set forth by the examiner for arguments (a)-(f), the dependent claims stand as rejected.

Conclusion

6.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of
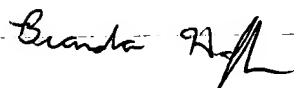
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
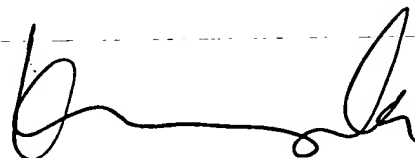
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon S. Hoffman whose telephone number is 571-272-3863. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BH

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